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Original Articles.

REMARKS ON FIFTY MASTOID OPERATIONS DONE IN THE PAST FOUR YEARS.¹

BY B. ALEXANDER RANDALL, M. D.

[Professor of Diseases of the Ear, Philadelphia Polyclinic; Clinical Professor of Otology in the University of Pennsylvania; etc.]

THE opening of the mastoid portion of the temporal bone for the evacuation of pus, after the unmerited eclipse into which it had been cast for nearly a century, has gained increasing use and advocacy during the last few decades. Begun as a desperate resort, and often withheld too long in cases demanding it, it has been practiced with increasing boldness by general and special surgeons with the result that timely and careful employment has greatly improved the record of its results; yet it has again been employed under doubtful indications, in a way that has raised anew questions as to its propriety. The great advance in intra-cranial surgery has shown that conditions once regarded as hopeless can be successfully combated by modern methods. The timid plan of cutting down

upon the mastoid and resting satisfied with that, is growing less frequent, since the conservatives are forced to admit that they have then to wait for months or years for nature to loosen or throw off dead tissue, of which most, if not all, might be removed with safety in a few minutes, and wider clinical and anatomical study is showing the way more clearly to radical but truly conservative measures. Yet the aurist can never forget that the organ of one of the most important senses is committed to his care, nor be content if he has avoided the dangers to life at needless cost to the hearing. The relative safety of timely operation has been proven by the fact that death is growing steadily less frequent in operated cases, and falls far below the proportion of fatalities where operation is indicated yet refused. At the same time we are improving the definition of the larger group of cases where vigorous antiphlogistic treatment, by hot douching, dry heat, and rest in bed, will safely avoid the dangers of mastoid inflammation and obviate the resort to operative intervention. The wider spread of rational treatment of tympanic suppurations will doubtless do as much to lessen the frequency of serious intra-

¹ Read before the Philadelphia County Medical Society.

cranial extensions as the better and more hopeful diagnosis of their occurrence and accessibility during life will bring them into notice as demanding intervention and yielding to surgical skill.

The notable results obtained of late years by general surgeons has called more widespread attention to this field and awakened more general interest; but it should not be forgotten that it has been quite frequently the aurist who has diagnosed the case, indicated the operation; and only sometimes called in the general surgeon to perform it. And while the aurist has rarely reported his results in these fields in general meetings and journals, it has not been because he has not obtained the same brilliant success, though oftener without than with perilous, and somewhat questionable operation. It should be better known than it is that the suggestion to open and evacuate the thrombosed lateral sinus was put forth by Zaufal ten years before it occurred to Victor Horsley; and that it has been rarely done by aurists because by mere mastoid trephining they have obtained recovery in too many pyæmic cases, where the long-known purulent thrombosis in the mastoid emissary vein showed thrombosis of the lateral sinus. It has been suggested that the aurist ought to call in the general surgeon to do his mastoid operations; and surgeons in conclave, as in Berlin a few years ago, have found much fault with the lack of radicalism which we often show. But Küster, who was the most hostile critic, showed in the discussion that he had small and none too brilliant experience of mastoid trephining and had no adequate acquaintance with the methods or results of the aurists whom he criticised. The method of chiseling away the back wall of the auditory canal, which he advocated, had long been employed by aurists, like myself, in the appropriate cases; but will probably not often be practiced as the routine procedure by anyone having fair respect for the organ of hearing and a knowledge of the perfect results generally obtainable at less risk and cost. That v. Bergmann and others have had large and valuable experience in this line is undoubted; yet what general surgeon has done some three hundred of these operations, like J. Orne

Green, of Boston, Schwartze, of Halle, and several other otologists? Having done less than a hundred operations myself, I can take but a low place in the list of aural operators; yet few, if any, of the general surgeons of this or other cities can cite a wider or better series of cases. Men are known sometimes by their failures, and perhaps some of you can tell of more unsucces on my part than I am myself aware of; yet I, too, could point to many histories of cases that came to me from other men, or, leaving me, have died under the hands of others. And it is because it is very hard for the operator to gain such knowledge as to the ultimate results of his cases that I here present my experience for criticism and emendation. Doubtless the four years of epidemic influenza have greatly influenced the matter of mastoid inflammation and enforced more frequent resort to operative intervention, for the notices of such cases have redoubled during this period, and my operations, previously infrequent, rose to seven in 1889, ten in 1890, fifteen in 1891, and twenty in 1892. The increase of my ear patients from some 1200 at the earlier, to 1500 at the latter period, has combined with other influences to enlarge my experience in this direction; but other men have the same increase to report. Roosa, who has always advocated operation, had but thirty-four cases to report from his twenty years' work up to 1890, and has since then opened the mastoid more than a hundred times; and Schwartze, who took from 1864 to 1883 to obtain his first hundred operations, has been doing them in treble proportion since. Yet the finding of past years, that about four per cent. of my ear cases presented evidences of mastoid inflammation and about one-fourth of these demanded operation (50 cases among 5000), has not been verified this year; and whereas, the first half of 1892 gave me fourteen operations, but few mastoid cases and a single operation have been met this year. Most of these operations I have myself performed, but a few have been done by others—as some of the university cases by Dr. Brown, the Instructor in Otology, and the one of this year was kindly done by Dr. William J. Taylor during the incapacitation of my right hand.

As a result of the study of some two hundred cases where the suggestions of mastoid trouble, as furnished by pain, redness, edema, apparent fluctuation, and deep-seated tenderness to pressure, have been decidedly disquieting, I believe that quite three-fourths of such cases can be brought safely through without resort to operation; and that unless the symptoms are urgent, or the fluctuation unmistakable, the surgeon can give a fair trial to vigorous use of heat by douche and hot-water bottles, with rest in bed and good hygiene. But a number of my patients were brought to me after all hope of resolution was gone; and when pus is present in or on the mastoid, I can imagine little cause for delay in evacuating it. The fatal results of the disease may not always be avoided; slow, tedious healing may be the best that can safely be secured, and facial palsy or impairment of hearing may prove irremediable, or may even occur after operation. Prognosis must be cautious, and one should never promise his patient anything more than that he will give him his best judgment and skill; yet, none the less, in careful hands the opening of the mastoid will continue to give, as it has done in thousands of cases in the past, the fullest justification for its performance. The fifty cases which I here report include but two of known fatal issue, although others ultimately died of tubercular meningitis or related troubles, as my specimens will show. Only one case (which has been reported in full elsewhere) gave room for ascribing the death to the operation, and it is the only case in which it might be said that no pus was found in the carious antrum. Generally a bone sinus was already present, sometimes already communicating with the exterior, and the operation was the rather trivial one of curetting or otherwise removing the carious portion of the bone. While fully believing in the desirability of the removal of every particle of pathological tissue, whether soft or bony, with closure of the wound for primary healing, I doubt if this can often be safely attained. Due regard for the important structures in and around the field of operation demands that with full knowledge of the anatomy we shall be radical in directions where it is safe

even to overdo the absolute requirements, but conservative to the verge of timidity as to opening the facial or semi-circular canal, the middle cerebral fossa, or the lateral sinus. Recovery has often taken place uncomplicated by such an occurrence; but its needless performance should be regarded as a blunder which might prove disastrous.

The technique of operating should vary with the nature and needs of the case. Usually a liberal incision close behind the auricle, free exposure of the bone and penetration by the gouge close behind the auditory canal *below* the level of its upper margin and the *spina supra meatus* is safest and surest to reach the antrum. The claim of Koerner, that the cranial measurements give any assurance of safety or danger, are wholly unsubstantiated by my far wider study. The advice to operate in any one way, as urged by Küster, with more than the minimum requisite of violence to the integrity of the parts, I unhesitatingly condemn as irrational. The intricate mastoid cavities cannot by any fair thoroughness be surely made and kept aseptic, and extensive areas of freshly-opened bone afford perilous opportunities for septic absorption.

Cases are met where the lateral sinus, covered by the merest film of bone, fully occupies the ordinary field of operation, and it may be even be visible through the intact bone; therefore, close scrunity of the uncovered mastoid is a prerequisite to any penetration. The trephine or drill is being less used by all men who operate often, since study and experience show that in the dangerous cases their use is less safe than the gouge. It remains to be seen how far the mallet can be safely employed, in spite of the advocacy of Schwartze and his disciples; for my part, I expect to use it very rarely. The hand-gouge is safer, though slower, and can be carried through the hardest bone. Within the mastoid the spoon and the burr are the safest instruments for carrying the opening inward, forward, and slightly upward to the antrum. The middle cerebral fossa is rarely as low as the upper wall of the meatus, and never below it, at the point of operation. The facial and semi-circular canals are never less than fifteen

mm. from the spina, and in a large convex mastoid even greater penetration may be safe; but the antrum ought always to be encountered without going deeper. Drainage and access to the antrum is the principal point in the great majority of cases, with extension of the operation in any other direction according to the needs. Irrigation is a questionable measure, both in operation and after-treatment, and is better avoided. Drain-tubes, gauze packings, and open treatment of the wound are unfortunate necessities in most cases, but should be avoided, if safely possible, the free incision being narrowed or closed by sutures. Healing is possible by first intention in a few days; but several weeks of after-treatment is usually requisite; and if thoroughness has not been practiced because of real or groundless fear of doing too much, or the patient's recuperation is poor, months may pass before full healing can be gained. Recurrence may take place under provocation, just as the other ear may be similarly involved; but this will be rare after a proper operation, and, like the occasional deaths, will be in spite of the operation and its real benefits.

Whether operated on or not, mastoid empyema will generally be a very dangerous condition, calling for the fullest skill of the medical man to prevent it, if only incipient, to diagnosticate it, if present, and to treat it and its consequences with fearless conservatism.

DISCUSSION.

Dr. O. H. Allis: I think that in the use of tools each man has his own choice. A sculptor will take his chisel and work as delicately as can be on a piece of marble, almost making eyelashes. I have heard many speak against the mallet and chisel, but give me a sharp chisel and a nice mallet, and I can cut through the skull without injury. If properly handled, the chisel and mallet will not jar the skull. If I were bound to select one instrument for skull injuries, I would prefer the chisel.

Dr. S. MacCuen Smith: It is well to keep in mind those cases of mastoid disease in which the only symptom presented is pain. I will relate a case sent to me from the interior of the State. A

young woman, who had suffered with pain for some months previous, was brought to me five months ago. I felt that there was some middle-ear trouble, possibly pus in the middle ear, and advised opening of the drum, which was refused. Two months later the patient was again brought to the city, and admitted to St. Joseph's Hospital, where I opened the drum and found pus. This gave relief for four or five days, and then the pain became as severe as before. With the assistance of Dr. Keen I opened the mastoid and evacuated pus. Since then the patient has gradually recovered. There was no symptom besides the pain. No swelling, redness, or oedema. The pain was referred to the head generally, but principally on the affected side.

Dr. E. La Rue Vansant: I agree with the statement made by Dr. Randall, that a small percentage of cases require mastoid operation. I think that the treatment which he has advocated in the milder cases, will generally avoid mastoid complication. I think also that an incision down to the periosteum (Wilde's incision) will often avoid further involvement of the mastoid, and I have had a number of cases where I have made such incision, and obtained the most favorable results, without further operation.

I regret that Dr. Randall has not seen fit to announce the results of these operations.

Dr. Ernest Laplace: I have operated on five cases of mastoid disease, using the surgical engine. I do not see how you can guide any instrument better than the surgical engine and burr, which acts simply as it is pressed.

The conditions for operation and the results of operation vary with each case. It is simply a matter of opening a bone abscess, and doing as little harm as possible while scraping and sterilizing the abscess cavity.

Dr. B. Alexander Randall: I am hardly prepared to discuss the value of Wilde's incision. It is highly lauded, but I have rarely done it of late years. Under careful exploration, I have usually found the bone softened, and often an actual opening, so that I have rarely been able to limit myself to Wilde's incision. In the group of cases earlier in

my practice, where I primarily made only a simple incision, I found myself within a few days or weeks compelled to open the bone.

The surgical engine has its uses, and unquestionable advantages. Dr. J. Orne Green, whose experience is the largest in this country, and probably the largest in the world, uses it habitually after laying the mastoid open with the chisel. He formerly used the mallet, but finally abandoned it. Its advocates employ it in various ways, striking the blow in carefully chosen directions with a light tap, and using a mallet with a spring handle; yet serious or fatal shock has seemed to depend upon its employment.

The surgical engine has the disadvantage of being unwieldy. If we use the gouge, we can readily carry our instruments with us from place to place, and have in a pocket-case all that may be required for any operation. The visibility of the work has been referred to. While I make a large incision, it has never been my fortune in these thick oedematous tissues to get and hold a fully satisfactory view of the parts being operated upon, particularly when one gets into the diploetic bone, where there is much oozing.

The results have been asked for. I do not think that I have had sufficient experience to put forward my results as containing anything of special value. The results of the men who have done their hundreds of operations have sufficiently set forth the matter. Schwartze lost 10 per cent. of his first one hundred cases, and 4 or 5 per cent. of his subsequent cases, because he now uses the operation in other than the desperate cases. That I know of only two deaths in these fifty cases does not mean that others may not have since died; but I can safely assert that very few of these cases died of the original trouble, although, as shown by the specimens presented, I have followed to final death quite a group of them. I gave my results in a series of thirty-two cases reported to the American Medical Association last year. All but four of the cases were cured; cured of the mastoid disease, cured generally of the tympanic suppuration, and cured often of the impaired hearing; yet the impair-

ment of hearing, the paralysis of the facial muscles or other lesions, sometimes prove irremediable. Two of the cases died, and in one that I know of, the disease recurred. One case, seen with Dr. Thorington, was similar to that reported by Dr. Taylor. At the first operation I satisfied myself with evacuating the neck abscess and the digastric collection curetting out of the carious mastoid, and syringing freely through the tympanic cavity. Three months later I had to operate again. I then opened through the intact cortex and secured thorough healing.

In one case there was recurrence at the end of eighteen months, after sea-bathing, apparently a clear recurrence unassociated with the original trouble, and, therefore, one which should be regarded as *de novo*. In the interval, there had been entire freedom from suppuration, although the patient had undergone a cold-taking, which set up suppuration in the opposite ear.

In one case the suppuration broke through the roof of the tympanic cavity, giving rise to fatal brain abscess. This is the only case of brain abscess that has occurred. It was unannounced by motor or other symptoms.

Dr. Taylor: I wish to urge most strongly the advisability of opening the mastoid and not simple incision. I saw, last year, a young child who had inflammation of the middle ear, following influenza. It was treated by a gentleman who apparently did not appreciate the necessity of opening the mastoid cells. In a short time the child had a cerebellar abscess and died very promptly. In making the post-mortem, I could readily trace the course of the infection from the mastoid, along the bloodvessels into the cerebellum. Where there is such disturbance as would warrant interference, it seems to me that opening the mastoid would increase the danger very slightly, and would greatly increase the safety of the patient.

EVANS (*Lancet*) reports the recovery of a case of pernicious anemia, under the transfusion of defibrinated blood, with two per cent. solution of sodium phosphate.

REPORT OF INTERESTING CASES
IN ABDOMINAL SURGERY.¹

By M. PRICE, M. D.

DR. HENRY LEAMAN has kindly consented to allow me to report this case of mechanical obstruction of the bowel, as it is one of great importance, and it is his report I give and not mine. You will remember a similar case reported for the same trouble nearly two years ago, and as that case was one that many thought strongly reported, I thought best to call your attention to this one reported by Dr. R. Leaman, and operated by Dr. Henry Leaman, and I had the pleasure of assisting in the work.

DR. LEAMAN'S REPORT.—I was called to see Thomas P. on November 1, 1892, who presented the following conditions, viz.: retention of urine relieved by the catheter, no passage from the bowels for three weeks previous, when he had done heavy lifting and active work. My idea was that there must be invagination or twisting of the bowel, and treated him after the usual methods both by mouth and rectum, still nothing in way of relief was accomplished; the enlarged abdomen grew until the tympanitic condition gave place to a slightly dull note everywhere over the abdomen on percussion from excessive distention.

The vomiting, which was always present, now became somewhat stercoraceous. Respiration became shallow, rapid, and feeble from the encroachment of the diaphragm. Pulse feeble, mind wandering. But with all this the temperature never rose above 100°. On November 10, 1892, I called in my brother, Dr. Henry Leaman, in consultation. It was at once decided that nothing but an operation would give the patient any chance. Dr. M. Price was asked to see the patient and assist in the operation. All abdominal pain had ceased about three days.

The operation was done in a little room in Carleton Street, and, as usual to the location, the environments were not of the best. The patient was taken from the bed and placed on a table and a median incision made as in abdominal

operations; the bowel enormously distended with liquid. A search was made for the point of obstruction, but I could not find any. Dr. Price also made an effort to find the obstruction. Failing to find one, we decided to open the bowel and empty out its contents and then make a thorough search for the obstruction. This also failed. The bowel was carefully stitched and the patient put to bed. In the next forty-eight hours he had about thirty evacuations. The bladder had to be relieved with a catheter. He made an uninterrupted recovery.

Mr. K., patient of Dr. Romaine, of Lambertville, N. J., aged thirty-two years, had had a number of recurring attacks of severe pain in the region of the appendix, all of which, save the last, have yielded in two or three days to purgation by salines. Last attack occurred May 2, 1893, and he was at once freely purged. This gave considerable relief; but the pain would return in twelve or fourteen hours in as much severity as ever. It was then decided to have an operation, and I was asked to operate.

May 7. I carefully examined the patient, and from the history and the existence of peritonitis, and the fact that all his pain and suffering came from the region of the appendix, also that he had had a number of attacks with the same symptoms, I did a section and found from three to four feet of ileum adherent in mass over the head of the colon, greatly adherent and covered with inflammatory lymph. There was some pus in the mass, but very little. The bowels were completely separated, washed and replaced, and then the appendix looked for and found in a hard mass curled up and adherent to the head of the colon on one side and to the pelvic bone on the other. The adhesion to the pelvis was loosened, the appendix and bowel were brought out, but the bowel could not be removed without great injury: So, with a thorough irrigation of the peritoneal cavity, stitching of the lower end of the wound, the hardened mass at the head of the colon, with the appendix attached, was placed directly under the upper edge of the wound and over it a gauze drain, which was left in place for thirty-six hours; afterward dressed daily.

¹Read before the Philadelphia County Medical Society, May 24, 1893.

Patient had no increase of temperature or pulse after operation, and made an uninterrupted recovery.

Mrs. H., aged forty years, suffering from great nervous prostration, constant pelvic pain for the last two years. She was treated by Dr. Peltz, her family physician, with great patience and care, but without any lasting benefit.

I examined her in February in consultation with Dr. Peltz, and found no marked pelvic disease—nothing that warranted an operation. In one week after my visit she was examined by a Philadelphia gynecologist who used an instrument to measure the depth of the womb, and its freedom from adhesions. The instrument gave her violent pain and greatly increased her suffering. May 4th. I again examined her and found the uterus fixed, and on the left side a large fluctuating mass—right side adherent. May 6, 1893. I did a section and removed a large ovary and tube distended with blood-clot, contents measuring about half a pint of decomposing blood and pus; the right side a pus tube.

How much this trouble was due to a previous existing disease, or how much to the intra-uterine examination, I leave you to judge.

Herbert H., son of Dr. H., of Pember-ton, N. J. Appendicitis. Operation; drainage; recovery. This is the third case in eight months that I have seen in the hands of this physician—two operated on and recovered. The third, a young man nineteen years old. When I was called he insisted he was much better, and would not submit to operation. He had well-marked symptoms of abscess of the appendix. He continued to improve, and for three months afterwards declared to Dr. H. that he was perfectly well. While unloading a can of milk he felt something give way in the right inguinal region and died in twelve hours, before anything could be done for him, of peritonitis.

DISCUSSION.

Dr. Joseph Hoffman: Dr. Price stated that in the cases on which he had operated he had not met with high temperature except in two instances. The question of temperature is an interesting one. In

one of the most serious cases of appendicitis the temperature was not markedly high, although there was gangrenous gut and abscess. The pain and tenderness were, however, marked. I have seen a case in a young child where the temperature was abnormally high.

With regard to operation: I am puzzled to decide in what cases operation should be done. I have seen cases in which the condition seemed to be imminent recover without operation, and I have seen cases apparently parallel die. Where the line is to be drawn between the cases that will recover under medical treatment and those in which operation is required is difficult to decide. Within a week I was called to see a boy eighteen years of age in a second attack. There was high temperature and a mass easily to be made out. The bowels had been bound up, and no relief was afforded by anything that had been done. I put the boy on purgative medicines and within forty-eight hours there was reduction of temperature, and in another forty-eight hours the abdomen was perfectly pliable and the boy apparently well. I suggested operation, but it was not accepted. Whether or not this trouble will come back, I cannot say.

Dr. Addinell Hewson: I have made some investigation in the dead body with reference to the position of appendix. I examined some 74 bodies. In this number I found evidences of appendicitis of more or less severe degree in 23 cases. Only I showed that there had been operative interference. The investigation was not made to determine the presence of appendicitis, but simply to obtain anatomical data by which the position of the appendix could be more definitely reached. The position of the appendix varied considerably. In one instance it was in contact with the under surface of the liver. In many instances it was in the cavity of the pelvis. In many it was above the crest of the ileum, and in the majority of cases the base of the appendix was above the inter-iliac line—that is the line drawn from one anterior superior spinous process to the other. I made some notes in reference to other points in connection with the appendix, but they are not germane to the discussion. I merely wish to re-

call the fact that there were evidences of appendicitis in 23 of the 74 cases.

The results of the examinations will be published later in the *Amer. Jour. Med. Sciences*.

Dr. Daniel Longaker: It seems to me that the last case reported is only explicable on the assumption that as a result of rude manipulation some focus of pre-existing disease was disturbed, or, if the trouble was not produced in that way, it must have been set up by the production of endometritis and extension from this point. I assume this from an experience that I have had. A woman supposed herself pregnant and introduced a knitting needle into the uterus. She experienced no pain at the time, but in the course of a few weeks there was severe suffering and septic endometritis. Whether or not she was pregnant was never ascertained. The inflammation soon extended and involved the tubes, and in a few weeks there resulted a large tubo-ovarian abscess and a decided attack of pelvic peritonitis. The trouble was promptly removed; but I may say that the endometritis still lingers, and will probably require a second operation, that of curetttement. I would ask whether or not this condition exists in the case referred to by Dr. Price.

Dr. James Collins: Regarding the relations of medical and surgical treatment in appendicitis, I am sorry to report that I have seen several patients die in whom I had advised operation, but was overruled by the medical attendant. I have seen one or two saved, but that is such a limited number that I dare hardly speak of it in connection with the number of cases reported to-night. I suspect that it is safe treatment where the obstruction and symptoms of appendicitis continue after the second day, to consider the advisability of surgical interference, and especially so if there is present a sign not often mentioned, which in the male is pain in the line of the cord and testis. In one or two cases the medical attendant has taken the ground that because there was no high temperature there could not be any very serious inflammation in progress. I have for many years advocated operation in appendicitis, and I have said that I would never let another case where there were evidences

of peritoneal inflammation die without operation.

The President, Dr. De Forest Willard: I am glad that Dr. Price emphasized the point of low temperature which is so common. It seems that in these cases the temperature is positively no indication of the severity of the case, and is not to be relied upon unless it is very carefully watched. There are certain cases where, if it can be watched day after day, it then becomes an important element in diagnosis and prognosis.

In common with Dr. Hoffman, we are all seriously puzzled to draw the line between the cases that will recover without operation and those which should be operated upon. This subject cannot be discussed too frequently, and every case should be recorded and thoroughly considered and studied.

Dr. George E. Shoemaker: The point of diagnosis is one of great interest, and those who have had surgical experience with appendicitis should emphasize the fact that there are no signs which are absolutely reliable. Dr. Willard will recall a case which I recently reported, and which he afterward saw, where there was gangrene of the appendix and where there was no tumor; where there was no tenderness in the rectum, and where there was no tympany. The belly was scaphoid, and yet there was gangrene of the appendix, with perforation. I was utterly deceived as to the necessity for operation in a case which occurred several years ago. A German woman of exceptionally good physique, and whom I knew to have no uterine or tubal disease, was suddenly taken with chill and pain in the right iliac fossa. The temperature was up to 104°, and the symptoms persisted for four days. I considered the case to be one of appendicitis, feared pus, and advised operation. I had a consultant who also advised operation. The patient refused and asked to see still another consultant, and in the twelve hours of consequent delay her condition completely changed for the better, the temperature went down, and in time she made a complete recovery without operation. Within a few days the patient passed pieces of tapeworm which probably had been the exciting cause of the appendicitis. As

contrast to this unexpected recovery, on the very day of my proposed operation a young man died in this city because he had a pint of fetid pus about his appendix, and because one of the most capable diagnosticians anywhere denied its presence till too late. The great majority of cases that I have been called upon to observe have gotten well without operation, because pus did not form. But the attacks recur. This question is one of gravity. A gentleman came to me today to know what I would advise in a case which I had seen some years ago with him. The patient then had appendicitis and recovered, but the attacks have recurred, gradually becoming more severe and the intervals shorter. I said that in such a case operation would be advisable; but each case must be studied by itself. There are no definite rules, and never will be.

Dr. William M. Welch: I have seen a few cases of appendicitis, and recall some four or five that have recovered without operation, still I am inclined to think that surgical interference is a matter to be thought of in all such cases. Last summer I saw a case in consultation where I proposed that a surgeon be sent for with a view of considering the propriety of an operation, but the patient positively refused, and after suffering for two or three months recovered, as I believe, perfectly. One of my cases, a child, developed an abscess which discharged through the umbilicus for a considerable time, but even this was followed by recovery.

You will remember, Mr. President, that a year ago a discussion took place here on this subject, and that the surgeons insisted that an operation should always be thought of, while the physicians held that surgical interference was required only in a small proportion of cases. There was present at that meeting a layman of considerable prominence who told me the next day that he was deeply interested in the discussion, as he had recently gone through an attack of appendicitis; that the surgeon who was called in consultation advised operation, while his attending physician opposed it. He said he followed the advice of his physician, and is glad he did so. I mention this to show that recovery from appendicitis may fol-

low medical treatment when surgical interference is thought necessary.

Dr. James P. Mann: I wish to say a few words in regard to two cases that have come under my notice. One was a physician, a friend of mine, and a man of considerable surgical experience, especially in abdominal work. He simply felt sick, but had no pain and no elevation of temperature. There was a little constipation. A diagnosis could not be made, until, finally, Dr. Wyeth, of New York, inserted his finger into the rectum and found a soft tumor on the right side. He then hazarded a diagnosis of appendicitis. The case was operated on and twelve ounces of pus removed, with recovery.

The second case was that of my son, two-and-a-half years old. He was taken sick in the night and appeared to have a little pain in the abdomen.

The temperature remained normal. The case was seen by Drs. Joseph Hearn, A. G. Hinckle and Allis. For the first three days there was some obstruction of the bowels, but that passed away under simple treatment. The child seemed to be improving, but at the end of a week he suddenly went into collapse and died rapidly.

The post-mortem showed that there had been appendicitis with rupture and general peritonitis, and all this without any symptoms of appendicitis that could be appreciated.

Dr. G. Betton Massey: I have seen two cases of appendicitis that have led me to certain conclusions in the matter. The first one was a gentleman of prominence in the city, who had been nursed through seven attacks of appendicitis. This man was almost black from the prolonged use of nitrate of silver. Some months after I saw him he died in a recurrent attack.

The second case occurred recently in a young woman. The attack was diagnosed by myself and others as a second attack of appendicitis. I advised the patient to put herself in the hands of a surgeon for operation after recovery. This she did not do. Three months later she had another attack and died. Of course, this is a small number of cases to form a judgment upon, but it leads me to the conclusion that surgery is the best treat-

ment, at least after the second attack—not during the attack but in the interval.

The President, Dr. De Forest Willard: Dr Welch is in error in intimating that the surgeon, "of course, urges operation." A few years since the subject was discussed independently by two societies, the Association of American Physicians and the American Surgical Association. The consensus of opinion in the surgical society was rather against the operation; that it was an exceedingly difficult and dangerous one, and that it often was impossible to find the appendix; while the physicians strongly advised operation, and the speakers considered it to be perfectly simple, and held that no one would have any difficulty performing it. From my own experience, and I have seen a large number of these cases in the past few years, I am sure the surgeons refuse operation in a far larger number of cases than they operate upon. The surgeon is often obliged to restrain the physician in his desire for operation.

Dr. Price: In my estimation there is only one treatment for appendicitis. I do not mean by appendicitis simply irritation of the appendix, but I mean inflammation of the appendix going on to ulceration and rupture. One physician asserted, in the discussion referred to by Dr. Welch, that if all these cases were operated upon there would be 20 per cent. more deaths than at present. The operations of surgeons in this city will positively refute that statement. I can give a hundred cases in the hands of a dozen men with not more than ten or twelve deaths. An appendix operation has no business to kill, and the man who cannot find the appendix does not know where the appendix is, or he has another condition, in which he has no business to hunt for the appendix. If there is an abscess at the head of the colon, with the peritoneum shut off, it should be opened, washed out, and packed, and the patient will get well.

With regard to the symptoms of appendicitis, I think that they are plain. If in the first twenty-four or forty-eight hours you find a tumor, that is not appendicitis. An abscess of such size does not form in so short a time. There may be high temperature—that has nothing to do with appendicitis necessarily. There

is an impacted colon and something irritating the colon. The administration of salts persisted in until free evacuation of the bowel is produced, cures the patient. If called to a patient with symptoms of appendicitis and you administer a purgative, and coming back after free purgation you find the mass and swelling, and the patient no better, "you have a case of appendicitis every time;" you have an abscess forming at the head of the colon. It is your business to cut down and drain that, and if you open the peritoneal cavity it does not matter. If you wash out the peritoneal cavity and put in a gauze drain the patient will recover. When you find a man with a pulse of 170, with a grain of opium, or two or three grains a day, with all the symptoms smothered, with a mass in the right iliac fossa, and a temperature of 97°, let him alone. Such a patient is beyond all possible chance of recovery.

We must recognize that all the troubles in the right iliac fossa are not appendicitis. Unless we have positive proof that there is trouble we should not interfere.

In regard to Dr. Welch's cases. Patients do recover with abscess at the head of the colon, but is that treatment. Because now and then a man falls off a house and is not killed, it does not follow that that is a good way to get down. We have no business to call that treatment. It is our duty to do that which we find best for the patient, and not run the risk of having the abscess break into the colon or other viscera, with matting together of the bowels and crippling the patient for life. A short time ago I saw, in Albany, one of the cases which Alonzo Clark reported as appendicitis cured by opium. The man said to me that he had carried that appendicitis with him ever since. It ruptured into the bladder, and he passed feces for six months. Such cases as this are a proof that we should relieve these cases, and do it early in order to avoid those fearful accidents which Nature in her attempt to save life brings about.

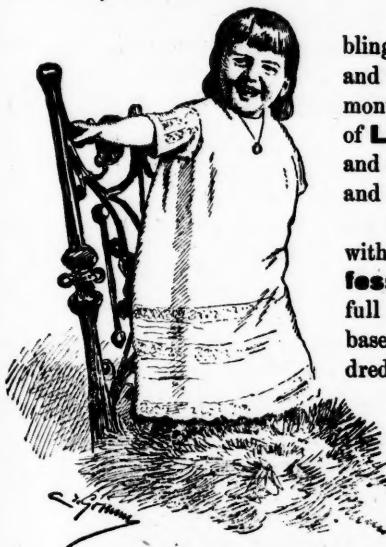
I doubt whether Dr. Hoffman's case was one of genuine appendicitis. There was trouble there at the head of the colon, with inflammation and tumor.

Dr. Musser had one of the most typical

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cases of appendicitis without rupture I ever saw. The patient had had three or four attacks every year for several years. Dr. Musser diagnosed appendicitis. In all the attacks except the last the patient was relieved by free purgation. Dr. Joseph Price was then asked to operate. Not being able to find anything in the pelvis or abdomen, he was in doubt, but Dr. Musser insisted that something must be done. The abdomen was opened and the tubes and ovaries found healthy. The appendix was not adherent and looked well. It was caught with hemostatic forceps and tied off. On squeezing the removed appendix the nastiest pus could be squeezed out of it.

In the seventeen cases on which I have operated, I did not remove the appendix but twice. The trouble is, that we do too much surgery. A surgical operation for pus at the head of the colon, from any cause, if done in time, should not have one per cent. mortality. We have come to the point where there is but one obstructor in appendicitis' cases, and that is the general practitioner consultant.

Dr. George I. McKelway exhibited a portable and convenient frame for Tredelenburg's position.

THE DIAGNOSIS AND TREATMENT OF FRACTURE IN THE NECK OF THE FEMUR IN PERSONS IN ADVANCED LIFE.¹

By OSCAR H. ALLIS, M. D.
[Surgeon to the Presbyterian Hospital.]

THERE is no department of medicine in which results are uncharitably, not to say unjustly, criticised than in injuries of the bones and joints; and in no department is one so frequently called upon to defend himself in the courts.

Fully alive to the importance of the subject, authors and teachers lay great stress upon the importance of diagnosis, and enter into practical minute detail in regard to treatment.

Proper as such a course may be in middle life, and in most fractures, I think it possible to show that in the particular fracture under consideration, great, even irreparable mischief may be done in attempts to establish a diagnosis, and that

death has not infrequently been the fruit of a blind and too strict adherence to rules.

My subject embraces but two topics for consideration, viz.: Diagnosis and Treatment, and both are to be handled with special reference to the period of life at which the accident is supposed to occur.

a. THE DIAGNOSIS.

This I shall discuss under three subdivisions: I. History of the case. II. Inspection (*i. e.*, passive measures). III. Manipulation (*i. e.*, active measures).

I. HISTORY OF THE CASE.—*Age.* After sixty years of age dislocations of the hip are rare. I have seen but one dislocation after that period, which was in a female. Indeed so rare are dislocations after fifty years of age (especially in women), that one may reasonably doubt the possibility of their occurrence. If this is probable at fifty, it becomes reasonably certain that at the age of seventy or eighty, an injury, whatever it be, cannot be a dislocation.

The nature of the accident. If a person be thrown from a rapidly moving carriage, or drop a considerable height, sufficient momentum will be created to make any variety of accident possible. But in very many cases the amount of momentum is not sufficient to dislocate a joint. An aged woman slips from a chair, falls to the floor, and is unable to rise, or in walking along the floor catches her foot in the carpet; she may not even fall, for she may catch hold of something. Cases are on record of aged females turning in bed and immediately complaining of pain in the hip attended with helplessness. One of the most frequent causes of hip injuries is a fall from the standing posture. Now in none of these instances is sufficient momentum created to cause a dislocation, and hence one can, from the history in many cases, exclude dislocation as a possible result of the accident.

Helplessness. In all cases where a person is rendered immediately and totally helpless, some grave injury must be predicated. I say immediately and totally. The word immediately may apply to any accident, but "totally" requires limitations. One person will fall, fracture the neck of the femur, rise with difficulty,

¹Read before the Philadelphia County Medical Society, May 10, 1893.

and by the aid of a friend or a cane walk home. Another cannot rise. Now I say that so far as the hip is concerned, both are totally disabled. If you observe the mode of progression you will see that scarcely any weight is placed upon the lame limb. I have placed my hand on the floor and asked such a one to step upon it and bear the entire weight upon it and have thus demonstrated practically how little dependence the patient placed upon the injured limb. If the patient is lying in bed the degree of helplessness may be detected by asking her to flex the limb, or raise it full length from the bed. The imperfect, ineffectual effort, the insinuation of the sound toes beneath the ankle of the lame limb, are eloquent confessions of helplessness.

II. INSPECTION.—The patient lying in bed, the two limbs lying parallel, and both of them for their full length touching the bed all the way down, no possible dislocation is present. On the other hand, if the suspected limb lie parallel with its mate, and full length upon the bed, but at the same time it is shorter and everted, you have good reasons to suspect a fracture; and if the injury occurred in advanced life and from a trifling cause, the seat of the fracture is above the shaft—it is the neck of the femur. Eversion of the foot may not be present, but if you ask the patient to invert it no result will follow.

III. MANIPULATION.—Thus far the physician has not placed his hand upon his patient. Thus far he has, at least, done him no harm. I am now to take up the active positive measures recommended by authors and teachers which are two often followed blindly and to the patient's detriment.

1st. To prevent unnecessary pain, to overcome the action of muscles, an anæsthetic is often advised. For what purpose; to restore a dislocation? No, but rather to enable the examiner to elicit *crepitus* and to establish beyond a peradventure the presence of fracture and its exact seat. Surgeons have written learnedly upon the differential diagnosis between intra and extra-capsular fractures, and to be dead-sure, either, they say, must be administered.

Of all the signs of fracture none is more difficult to elicit or more uncertain

than that of *crepitus*. The short fragment is usually not more than an inch in length and perfectly movable in all directions. If, as a fortunate result of the injury, the fracture is impacted, partially attached by bone, or by periosteum, then the short fragment will follow the long fragment and no sense of *crepitus* will be elicited. But the examiner, fully alive to the importance of determining positively the nature of the injury, and knowing that he has abolished pain with his anæsthetic, lifts the thigh vertically and then depresses it, repeating the manœuvre until he is sure of a sense of grating; while to locate the injury, to fix the precise direction of the fracture, to be able to say that it is intra-capsular or the reverse, the examiner requests an assistant to rotate the flexed or extended limb, while he studies the axis upon which the shaft revolves. One surgeon will satisfy himself that fracture is present by rotating the flexed thigh far beyond its normal possibilities, while another, to be certain, hyper-extends the thigh. And all this in a person seventy or eighty years of age, that does not exhibit a single symptom of dislocation, the only result of an injury that may be benefited by an anæsthetic, or may suffer from delay. I therefore cannot too pointedly condemn the employment of an anæsthetic when there is no single symptom of dislocation, nor too earnestly condemn all rude efforts, after fracture is suspected, to establish its exact locality.

From the history of the case and from inspection, the physician may strongly suspect fracture. It is important to have more than a suspicion. It is important that the diagnosis be reached, and that, too, without mischief or unnecessary pain. To do this no single symptom is, in my judgment, equal in value to that furnished by the *fascia lata*. This very important structure has a value in locomotion and in the erect posture that few appreciate. It consists of a strong, pliable, but inelastic structure, with a function akin to that of a ligament, and extending from the crest of the ilium to the outer tuberosity of the tibia. In its course it passes over the great trochanter and sends a process of attachment throughout the whole length of the femur. This *fascia* possesses signal value in enabling man to stand, restfully upon

a single limb. It is of the utmost importance that every physician in general practice should study this fascia, and he can do it best on his own person. Now, in case of fracture of the neck of the femur this fascia will be relaxed. It can readily be ascertained while the patient is recumbent, by gently adducting the suspected limb; under normal circumstances adduction makes the fascia tense. If it cannot be made tense in the injured limb as it can be in the sound, if the fingers can be depressed above the injured trochanter and are resisted upon the sound side, we have a most conclusive demonstration of fracture of the neck of the femur.

In concluding what I have to say upon diagnosis, I will say that in the aged, a slight fall rendering the patient helpless, with the limbs lying parallel, shortened, eversion, and a relaxed fascia lata, all the elements of the problem are present and the conclusion that fracture is present is irresistible, and the diagnosis has been reached without entailing unnecessary pain or aggravating an injury, at best permanently crippling.

b. THE TREATMENT.

My subject on this point must not be misunderstood. It is not treatment of fracture of the neck of the femur, but treatment of fracture of the neck of the femur in the aged. If the last clause is omitted, or for a single moment left out of the problem, the result may be disastrous.

In the treatment of fractures generally, the cardinal principles are *fixation* and *rest*. The important question is, Can prolonged fixation be attained in fracture of the neck of the femur in the aged and feeble? What are the conditions? An aged woman, often with an incontinent, irritable bladder, if she lie quietly upon her back, with splints to hold the limb still, she must be disturbed when the draw-sheets are changed; and no matter how often this is done, the whole sacral region is doomed to constant maceration. This, in a person of feeble circulation, and the result is pressure, sores within the first week of treatment. Then what? Oh, of course, remove the splints. But would it not have been better to have protected the patient against bed-sores? No one will ever know the number of deaths due to bed-

sores, the result of treatment of fractures of the neck of the femur by means of splints and confinement.

What then is to be done? If I were to give a universal rule, I would say, *treat the patient, not the fracture*. But it is asked, What result will follow from non-treatment of the fracture? Let me mention the history of a few cases:

CASE I.—A man, about seventy years of age, fell through the board-walk at Atlantic City, and was unable to rise. He was seen a few hours afterward by a physician of large general practice, who assured the man that he might congratulate himself on having broken no bones, and that he would soon walk as well as ever. He remained at Atlantic City seventeen weeks, with no other treatment than such as would be proper for a bruise, after which he returned to Philadelphia, where he visited the Pennsylvania, Jefferson, and Presbyterian Hospitals. Everywhere he went he was told that he had sustained a fracture of the neck of the femur, and that now he would do as well to move about and regain his strength. Remember, that this man had no treatment for fracture from first to last, and to-day he can go up and down stairs without taking hold of the banisters or the help of a cane.

CASE II.—Dr. Edwin Graham asked me to see a case that three months before had fallen upon the icy pavement. He arose with great difficulty and was helped home. Thinking he was only bruised, he sought no medical advice, but finding, at the end of three months, that he was still lame, he sent for his physician. This man was lame, but walking all about. He had only remained in bed for three days, after which he rose daily and sat about in chairs. Result: as good a limb as could have been secured by the most elaborate fracture-aparatus.

These cases could be supplemented by others from the experience of every general practitioner, and the lesson to be derived from them is an important one. The patient unsurgically treated, treats himself surgically and scientifically. Owing to the pain in the hip he is obliged to move with great care and deliberation, but regarding the injury as only a bruise, he asks to be helped out of bed, for he argues that he is as well up as in bed.

Thus bed-sores are averted, while by deliberate, gentle movements no possible harm is done to the efforts at repair.

Following what I may denominate the "no-fracture-treatment plan," I turn my patient on her sound side the day after the injury. I do not turn the trunk a little, leaving the hips undisturbed, but I turn her fully on her side, usually placing a pillow between the knees for the purpose of comfort and of steadyng the injured limb. This turning on the side should be attended to promptly, no later than the second day. It is a painless procedure and yields *so much comfort*. If the patient is doing well get her up upon the chair when her bowels shall require it. In this the general constitutional condition must be considered. The shock of fracture in the aged must not be undervalued. It requires days, even weeks, sometimes, for such persons to rally, hence the physician will act wisely if he considers the age and feebleness of his patient. There is less need of haste if there is nothing to fear from bed-sores, hence daily, or even twice daily, turning the patient upon the sound side will make it possible to delay getting the patient out of bed.

When the patient can bear removal to a chair, I attend to it myself. This gives the patient confidence and teaches the nurse. While the nurse takes the body, I take both limbs, and turning the patient, I bring the legs to hang over the bed. She then puts both arms around my neck, and I place both of mine around her body. She is thus assisted to stand, and turning slowly around, is seated in a chair provided for her. If this is done without haste or excitement, she will not wait for an invitation for a second outing. This will give time to air and fix her bed, and will also have a tonic effect upon the patient's whole system.

I am not now asking you to subscribe to a theory; I am recounting a practice that I adopt in public and in private, and of whose good results I can show many cases.

Let me mention one that bade fare to be most unpromising:

CASE III.—Mrs. J., seventy-two years of age, was knocked down at market and brought home. I saw her in consultation with the late Dr. Roger Keys. She looked older than her years, from the

effects of a disease (paralysis agitans). Incessantly during waking hours her head nodded, her arms shook, and her legs danced. This woman was put in bed on Saturday, and on Monday, two days later, a small red spot appeared upon the sacrum—the initial step toward a bed-sore. This remained for weeks, never getting larger than a three-cent piece, and not going deeper than the true skin, but was prevented from spreading by daily turning the patient on her sound side, and in about ten days getting her out of bed into a chair. Had this patient been confined to bed with a fracture-apparatus for a single week, a large bed sore would have undoubtedly been formed. Result of treatment: patient able to walk up and down stairs.

Another case is as follows:

CASE IV.—A clergyman, eighty years of age, was knocked down by a passing carriage. No attempt to confine patient to bed. In consultation with the late Dr. McMurray I saw him from the first and throughout his housing. He was out of bed within the first week, and then daily. Result: walked again, up and down stairs, and, old as he was, returned to his pulpit duties.

Cases like this prove that the let-alone treatment insures excellent results, while it relieves the patient of a vast degree of discomfort, to say nothing of more serious results.

What I have said must not be construed as a wholesale condemnation of surgical appliances. What I specially desire to emphasize is that the life and future of the *patient* is of more value than the broken bone; that the bone will take care of itself if the physician takes care of his patient. If surgical appliances are employed, let them prove their excellence by increasing the *comfort* of the aged sufferer. If implements are employed, those are best suited that can be entirely laid aside daily while the patient is turned on her side for a rest, or placed in a comfortable chair.

I am now about to make a remark that many of you will accept with caution, it is this: that nature never intended intra-capsular fractures to unite with bone according to the process she adopts in fractures of the shaft.

1st. She has inadequate nutrient for bony repair. The short proximal frag-

ment is almost without vascular support. To this, it will be replied that the artery of the teres ligament supplies it. Even were this true, the nourishment is scant for such a work. But I do not accept the theory that the head of the bone gets its supply from the teres tendon. The tendon is absent in the elephant, in the anthropomorpha, in the South American sloth, in the orang-outang, and occasionally it is absent in man. I believe the ligament has another function and does not contribute to the food-supply of the head of the femur.

2d. What would be the result if fractures of the neck united according to the laws of fracture of the shaft? In fracture of the shaft the provisional callus is often twice the diameter of the bone, and bone, periosteum, fascia, and muscle are all melted down in the inflammatory process. How would this work in fracture of the neck? How would the femur execute its movements with a neck twice the diameter of the head? Such a condition would invite re-fracture, or abridge to a great extent the movements of the bone.

The let-alone treatment is no new mode of practice; it is as old as Sir Astley Cooper, and I believe is based on sound hygiene and pathology.

DISCUSSION:

Dr. William Hunt: I have been particularly pleased with the whole paper, and unite cordially in almost all the views expressed. They agree thoroughly with the practice that I pursue. I was particularly pleased with the last statement, which is one that I have advocated and written about many times; that is, wherever throughout the body there are more important structures lying under the injured bone, there is an exception to the ordinary method of repair. In fractures of the cranium we have no callus to any extent. You find the case is true in the elbow, the hip, the patella, etc. If you go through the body, wherever you find this exception to the ordinary rule, you will find that the presence of callus would do infinitely more harm than the injury to the bone.

From a considerable experience with these cases, I am no believer in the power of absolute diagnosis as to whether the fracture is within or without the capsule.

Hence, whatever treatment is required, I favor it as though it were partially outside, so as to gain every advantage. I have treated many cases in this way, with very good results.

Dr. William S. Stewart: I wish to give a little experience that I had ten or fifteen years ago. I was called to see an old lady who had tripped on the carpet, and fell on her hip. I readily discovered a fracture at the neck of the thigh-bone, within the capsule. At the request of the family, a surgeon saw the case with me, and confirmed the diagnosis. The limb was then dressed according to his recommendation by the method then in vogue—extension and counter-extension, some fifteen pounds weight being applied. She suffered the torture produced by this for twenty-four hours. The next day I reduced the weight to five pounds. The family had become dissatisfied, and I said I would turn the case over to the surgeon, if they would first call in Dr. Agnew to see that nothing improper had been done. After Dr. Agnew had examined the patient, and expressed his opinion to the family (stating that there would be no bony union), they begged my pardon, and requested me to continue in charge of the case, which finally, at their earnest solicitations, I agreed, provided that I be permitted to do what I thought best. I then took off all the weights. The result was that in six or eight weeks the patient was out of bed, with good use of the limb, able to go about, and go to market and carry a heavy basket, until a year or two since, when she died from some other cause.

Having had this experience, it opened my eyes to the treatment of such fractures. I do not hesitate to treat all my cases, young or old, in that way, by adjusting the limb between the sandbags, and keeping the patient quiet. I have several cases to which I can refer, who are now in perfect health, are able to run or walk, and have good use of their limbs, and were not tortured to death by the old method.

Dr. John B. Roberts: I feel sure that many people have been woefully damaged by meddlesome surgery in the attempt to make a diagnosis between intra- and extra-capsular fracture. Such a diagnosis often cannot be made by anybody, and if it were, it would be of no service. These

fractures should never be subjected to rough movements to make out crepitus or preternatural mobility. A surgeon who cannot readily make a diagnosis of *probable* fracture of the neck of the femur, needs some further education, rather than some further knowledge to be obtained by manipulation of the patient. I have seen demonstrations made in hospital clinics to show crepitus and preternatural mobility, which seemed to me to be almost actual malpractice. I believe that many of these fractures are impacted; and breaking up this impaction takes away the only chance which makes union possible. If the fracture is extra-capsular, you will, probably, under judicious treatment, get serviceable union. It seems to me, therefore, that the points brought forward by the reader of the paper are exceedingly valuable if they impress upon the profession the fact that no ether should be given, and no violent manipulation made in suspected fracture of the neck of the femur, or any suspicious injury of the hip in old persons, unless it be made out that there is dislocation.

I differ somewhat from Dr. Hunt in regard to the explanation why callus is not thrown out. Dr. Hunt's view is that this is Nature's way of protecting more important parts from injury. My explanation is that where there is not much motion, and not much deformity, there is not much inflammation, and where there is not much inflammation there is not much callus thrown out. A fractured rib will often unite without much callus. An extra-capsular or intra-capsular fracture will unite without the formation of much callus if motion is not permitted. A fractured bone, where there is no displacement or motion, unites by first intention with very little callus. Fractures of the shafts of bones are much more liable to be the seat of callus, because, as a rule, such fractures are oblique, and the muscles above and below the seat of fracture have more opportunity to act, and cause deformity and motion.

In the treatment of these fractures, I always put on a moderate amount of extension, which does good in preventing muscular spasm, which often is the cause of pain. For the first week or ten days many of these cases

have a good deal of muscular spasm from irritation of the muscular mass and the nerve filaments involved in the injury. I apply one or two bricks, weighing four or five pounds, by means of the ordinary extension apparatus. This gives the patient comfort, and I do not believe that it is torture. If there are bed sores, or incontinence of urine, and it seems probable that the extension is not serviceable enough to permit it to be retained, I do not hesitate to take it off and allow the patient to lie in bed with the limb in a comfortable position.

I had a woman, perhaps over eighty years of age, with fracture of the neck of the femur, who could not stand any treatment on account of incontinence of urine and bedsores. She got up very early, and recovered with almost perfect use of limb.

It seems to me that the essence of Dr. Allis's paper is that such fractures should not be tampered with, and that it is meddlesome surgery, and even malpractice, to search for preternatural mobility and crepitus.

Dr. J. M. Barton: I have been thoroughly converted to the advantage of the methods described by Dr. Allis, and have used them for a number of years. I usually employ the double incline plane, and get the patient out of bed as early as possible.

There is one point that has not been mentioned, and that is, that confinement to bed is not only unnecessary and a damage to the patient, but it is frequently a damage to the limb. I have seen cases where the limb has been permanently stiffened by such treatment. Not only will the involved joint be stiffened, but elderly people, resting in bed for six or seven weeks, will often have no use of themselves. I remember two sisters whom I treated some time ago. One I treated over twenty years ago, in the ordinary way, and she was certainly almost helpless, and could be raised almost as one piece. The second sister sustained a fracture of the neck of the femur about ten years later. I treated her without extension, and had her out of bed on the third day. She recovered with complete use of herself, and was able to go about with a cane, and occasionally without it.

There is no subject of more importance than this, for these injuries frequently lead to suits for malpractice, and physicians are often criticised by the lawyers because they have used no apparatus in a given case. If it be well understood that the profession do not consider it bad surgery to treat these cases without apparatus, it will be of service.

With regard to mobility being the cause of callus. In the cases that have been here reported there has been great mobility, and where I have had an opportunity to see the ends of the fragments, no callus has been thrown out. In a fracture at the middle of the femur with incomplete fixation, a large amount of callus is usually thrown out, and where the fracture is united we find each extremity very much enlarged, irrespective of the question of union. This does not occur in the broken ends of an intra-capsular fracture.

Dr. G. G. Davis: I was glad to hear the remarks of Dr. Allis on the function of the round ligament, and I agree with him in regard to its lack of importance.

I should like to call attention to the fact that the studies of Mr. Bland Sutton have shown that the round ligament is a regression from the pectineus muscle; in other words, that it is not an active body in itself, but rather the remains of a previous body that was sometime ago of importance in the economy, and for that reason I believe that the many theories that have been propounded in regard to diseases of the head of the bone originating in this ligament, as well as the one alluded to by Dr. Allis, that the ligament aided to any great extent in the nourishment of the bone, are not well founded.

While many of us would be willing to go as far as Dr. Allis does in his liberality in the treatment of fractures of the neck of the femur, I hardly think that we would go the extent that Dr. Stewart alluded to, and treat all our fractures of the femur in the same way as Dr. Allis has advocated in the treatment of intra-capsular fractures in old persons.

Dr. Stewart: I did not refer to any fractures but those of the intra-capsular variety, but this treatment is applicable

to all fractures where the adjustment can be maintained.

Dr. Allis: I would say to every one, Do for the case of fracture of the neck of the femur that which will make the patient comfortable. If necessary, put on an extension apparatus, so that for a few hours you can apply a little extension, or apply sand-bags to keep the limb quiet, but take all appliances off at the end of half a day, or certainly by the next day, and turn the patient on the sound side, with a pillow between the limbs, and leave the patient in that position for one or two hours. Then turn the patient back, and if the hip is painful make a little gentle extension. I lay the entire stress upon the fact that the patient is old and feeble, and you must avoid bedsores, and do everything for the comfort of the patient. If you have a partly intra- and partly extra-capsular fracture, or an impacted one, the movement and change of posture that I speak of will not disturb the fragments, for the short upper end will follow the shaft. My next-door neighbor, an aged lady, fell and fractured her hip, and sent for the first surgeon in Philadelphia at that time. She was put on the extension treatment, and in a couple of weeks bedsores developed, and the apparatus had to be abandoned.

I do not want anyone to understand that I condemn all appliances, but what I wish to impress upon your minds is that I abolish them as the fundamental principle in such cases as I have described, where in many there is incontinence of urine, and the patients are so old that they cannot endure prolonged confinement. In many cases, if apparatus is persisted in, the patient is left more damaged by treatment than by the original accident.

The result of these fractures cannot be predicated from the treatment. One patient in falling may strike the hip forcibly, with the result of severe injury to the bone and other tissues, while another will strike the hip lightly, and produce much less injury. There will be different results, because of difference in the severity of the injuries at the time of the accident. One may suffer with pain for months, while another will have trifling discomfort from the first.

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A Weekly Journal of Medicine and Surgery.

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NINETEENTH CENTURY SENSE.¹

TO many a busy practitioner it seems that Medicine is an exacting mistress; demanding the utmost of devotion, of self-abnegation, and rewarding her votaries butiggardly, or not at all. Many a man works into it his best, and finds that the best is not good enough to win success. Every hour taken from the "business" of practice is a disadvantage to the business interests, even if spent in collateral pursuits. Nevertheless, if the physician is ever to rise above the place of the mere dragger, he must look somewhat upon the varied panorama of life that is constantly passing before his eyes. And well is it for him if he look not merely with the material eyes, but rather with organs in which has been developed the educated sense. And in just so far as the physician has developed in him the philosophic mind-methods, so will he turn with the keener enjoyment to "John Darby's" book. Dr. Garretson has shown not only that a man can

occupy three positions at the same time, and that with distinguished success, but that each of these three can be made to enhance the value of the work done in the others. As a practitioner, he has long stood as the greatest exponent of his specialty of oral surgery; as a philosopher, he has thrown light upon the darkest recesses in which the human soul may grope blindly; while as a teacher, the influence of the young intellects that he has attracted around him has aided materially in the development of his theories, while he has aroused in these young men the dormant powers of thought. Many a youth has come to him to learn anatomy, and has also been taught to think.

This exordium is essential that one may comprehend the reasons for Dr. Garretson's method; which, on cursory examination, appears needlessly involved and obscure. One might say that it must necessarily be so, in dealing with the profoundest topics that have ever occupied the thoughts of man. Life, death, eternity, God, man, and their co-relations! What could one expect but that subjects, which through all time have occupied the greatest human intellects, should be difficult of expression? But this is not necessarily the case; for the grandest thoughts are often expressed in language whose simplicity best displays their sublimity; even as some simple phrases of Beethoven attune the whole soul into such reverential awe as the technical difficulties of other composers never inspire. Dr. Garretson's method is suggestive, because his object is less to demonstrate truths than to arouse thought. Read a sermon of Minot J. Savage, and you cannot imagine anything better stated. He goes straight to his point, with a directness that makes him comprehensible to a child. The reader is left nothing but the task of verifying

¹Nineteenth Century Sense: being the Paradox of Spiritus Sanctus and of Rosicrucianism. By J. E. Garretson, M. D. (John Darby). 2d Edition. J. B. Lippincott Co., Phila., Pa.

references. Begin a chapter of Garretson, and it is pretty certain that before a page has been perused the reader is lost in meditation, aroused by some suggestive phrase.

In the present edition the author has rearranged the subject matter; though otherwise it is but little altered from the first. The opening chapter is entitled "Spiritus Sanctus." Any sentence in it might form the text of a sermon. The author's dominant idea is bodied forth: that there are degrees and varieties of human understanding and mental insight; that in the conception of a thing we must take into account the capacities of the seer as well as the qualities inherent in the thing itself.

"A man that looks on glass
On it may stay his eye,
Or, if he pleaseth, through it pass,
And the heavens espy."

The Rosicrucian is he who inquires; who looks beneath the surface, and plunges his regard into the depths beyond. Bits of curious biography are brought in here and there, of Rosenkreus, Robert Flood and Jacob Boehm, of Confucius and Gautama.

"Understanding of hypostases the foundation of knowledge." The term hypostases, or substance, was employed by the Greek theologians to designate the personality of the Godhead; but here is applied to God, man and brute—the latter including soulless man. "The hypostases of gods—meaning by this term perfect men—are Matter Ego, Holy Ghost." Man consists of matter, the body, which he drops at death; of soul, the God-spark, which may be lost by the man; and of Ego, the man himself, that which leaves the body and may lose its soul. As man develops either of these, the others atrophy. Cultivate the bodily appetites and both Ego and soul languish. Develop the self, through its instrument, the

mind, and the grosser affections, and the soul as well, become less prominent. But cultivate that divine principle, the spark of Godhead implanted in man, and the lofty self-abnegation of a Xavier or a Gautama is approximated, while fleshly appetites and merely intellectual objects are subordinated. This is the essence of Dr. Garretson's teaching; and surely no purer faith, no nobler aspirations, could be instilled into the human heart.

In the chapter on Matter, it is evident that Berkeley has made a lasting impression on Dr. Garretson, and from his own stores of anatomical knowledge he demonstrates the bishop's idea, and shows how the seeming paradoxes cease to be such on investigation.

The following chapters deal with the problems of modern spiritualism; mediums, their powers, tricks and limits; psychics; and, under diverse headings, the subjects over which modern thought is most exercised. It is good for the spiritualist to read of Dr. Garretson's experiences in this field; it is good also for him to whom spiritualism is but a farrago of superstition and trickery.

Throughout this book, and "Man and his World," which should be read with this, the author seeks to reach that elevated plane from which all roads may alike be surveyed; all the truths and fragments of truths on which creeds and beliefs are founded, are seen to be but component parts of one unified system. The Trinitarian and the Unitarian; Jew and Gentile, Mahomedan and Pagan, are found to be traveling towards the same goal, by different roads, with various degrees of progression, but all equally walking by the divine light within them, be it but a feeble glimmer, or that effulgent radiance that transfigured the countenance of Jesus.

Dr. Garretson's books commend themselves to all who have learned to doubt

their early religious impressions and remain in a state of indecision, not having yet found firm ground on which to rest their faith; to all who fear death, dread the pains of hell, or who look upon the great Beyond as an appalling mystery; to all who, firm in their present belief, are yet inclined to deny their brethren the right to a different creed; and finally, to all who, striving to develop in themselves that divine principle which we call the Good, can be aided by the wise words of an elder brother in the faith.

NEW STUDIES WITH OLD RESULTS.

DR. ENGELMAN, of St. Louis, recently announced in the *Medical Fortnightly* that he had obtained as results of his recent studies in faradism, among others, the fact that "rapidity of vibration is a hitherto entirely neglected element;" that "interruptions of far greater rapidity than hitherto known, up to 50,000 or 100,000 per minute, secure sedative, not to say anaesthetic, effects hitherto unknown;" and that "all important is the exact determining of the number of interruptions used."

Honor to whom honor is due, and we are sure that no one more than Dr. Engelman will be glad to learn that the exact ground he has covered, and the exact conclusions he has reached, were arrived at a year before in the same way by Dr. Hutchinson, of Providence; whose paper entitled "*Electrical Anesthesia*" was pronounced among those read at the meeting of the American Electro-Therapeutical Association, and who has been given full credit for what Dr. Engelman claims as results, in Europe and America.

We shall be glad to send an illustrated copy of "*Electrical Anesthesia*" to Dr. Engelman's address at any time.

Society Notes.

REPORT OF A CASE OF DETACHMENT OF THE LIGAMENT OF THE PATELLA. TREATMENT BY SUTURE. RECOVERY.¹

BY WILLIAM BARTON HOPKINS, M.D.,
[Surgeon to the Episcopal Hospital, Philadelphia.]

LAST November a large healthy man, forty-five years of age, was admitted to Episcopal Hospital. He had stumbled and fallen, striking his right knee with great violence upon a cobble-stone. Examination of the joint revealed a change of its natural contour. It was flattened anteriorly, and on flexing the leg upon the thigh, the form of the condyles of the femur became clearly exposed, as shown in the illustration.

There was a moderate fluctuation from effusion. The entire patella could be felt and seen drawn well up the thigh. No fragment of bone could be detected above the tuberosity of the tibia. As it was, therefore, evident that the patella had been torn away from its ligament, it was decided to open the knee-joint at once. The patient was etherized, and after preparation of the parts concerned, the seat of injury was laid bare by a longitudinal incision in front of the joint about seven and a half inches in length. Not only was the condition of affairs looked for found, but in addition to the detachment of the ligament from the patella, the whole fibrous covering of the latter was found to have been ripped off and to have remained attached to the ligament. The patella was readily brought down to its natural position between the condyles, and but for its bare anterior surface was found to be intact. Very complete and durable coaptation was effected by the introduction of eight interrupted silkworm-gut sutures at the following points: Three king sutures upon which the greatest reliance could be placed were carried through three small drill holes at the apex of the bone uniting it with the stump of the ligament. The upper margin of the aponeurotic hood was then attached to the fringe-like fibres of the tendon of quadriceps extensor with which it has

¹Read before the Philadelphia Academy of Surgery.

been continuous, while its lateral margins were sutured through drill holes on either side of the patella. As all of these silkworm sutures passed through either holes drilled in the bone or through a very stout tendon, the approximation of the parts was not only snug but very strong. The points of suturing are shown in the accompanying illustration.

After thoroughly cleansing the knee-joint the long wound was closed, catgut drain being placed in its upper and lower angles. A liberal gauze-dressing was applied, and a long posterior splint retained to the limb. Three days afterward the dressing was removed on account of a slight rise in the patient's temperature, but it was found to be quite dry, except at the points of drainage, where a few drops of blood-stained synovial fluid escaped. The joint was free from redness, fluctuation and pain. In a month the patient was allowed to get into a wheeled chair. The natural contour of the joint was entirely restored.

Five months after the accident he was allowed to begin to flex the knee with considerable force, and it is interesting to observe that almost all the motion he now has, has been acquired within one month. As will be seen, he walks without a limp, and his limb has almost completely regained its strength. The patella is felt to be freely movable, and there appears, therefore, to be no obstacle to the restoration in a short time to the normal function at the joint.

So far as I can learn, sixty-six cases of rupture of the ligamentum patellæ have been reported. This number includes detachments of its upper and lower extremities as well as ruptures in its continuity. Of these I have had an opportunity of referring to fifty-five, including thirteen cases which were collected by Dr. Sands from the records of four hospitals in the city of New York.

In all the cases where treatment was employed some appliance appropriate for fracture of the patella was used with results stated to be fair or good, save three. In two of these the knee-joint was opened and the parted ligament sutured to some fibrous tissue attached to the tuberosity of the tibia, by Sands of New York, and to a similar structure at the

apex of the patella by MacFarlane, of Toronto, with excellent results. In both these cases silver wire was used. In the third case operated upon the stump of the ligament and some fibrous tissues at the apex of the patella were scarified long after the occurrence of the injury, but no sutures were used.

Two very remarkable cases are reported by Mr. Shaw, of London, of simultaneous rupture of both ligaments. In one, both ligaments were detached from the apices of the patellæ, while in the other case both parted from their insertions in the tuberosities of the tibiae.

While, technically, even a very minute fragment of bone remaining in contact with the detached ligament would, if the separation occurred at its patellar extremity, constitute a fracture of the latter, a similar condition at its tibial insertion could hardly be classified, without causing confusion, as a fracture of the tibia. It would, therefore, seem proper to class such an injury as rupture, or, I think better, as detachment of the ligament, if a greater part of its rent surface is tendinous, not bony.

In a very large proportion of cases recorded the lesion was caused by muscular violence. The case now reported I incline to attribute to the combined forces of direct impact and muscular contraction acting simultaneously; the cobblestone forcing the apex of the patella backward, while the tensile strain was applied by the muscles of the thigh. I do not think that the tendinous covering of the bone could have been stripped off by either direct violence or muscular contraction alone. Regarding the advantage in operating at once or at a later period; if opportunity for the former offers, I see no reason for delay, provided there is no severe bruising of the soft parts adjacent, for the inflammatory reaction from the mere rupture is in most cases noticeable slight, and coaptation can be far more satisfactorily effected before, than after adhesions have formed.

As the special feature of this case is the stripping of the bone, it would be of great interest to know if a similar injury had ever happened before, but as its existence could not be revealed except by operation, whether it is unique or not must remain a matter of conject-

ure. While it might have added to the risks of necrosis of the bone from impairing its blood supply had suppuration occurred, it certainly aided materially in securing an approximation well equal to resisting any accidental strain that might be put upon it during the process of repair.

**AN OVARIAN TUMOR WEIGHING
111 LBS. REMOVED FROM A
CHILD OF 15, WHOSE WEIGHT
WAS 68 LBS.¹**

By W. W. KEEN, M. D.

[Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College.]

MISS B., of Benezette, Pa., was first seen by me at Driftwood, Pa., February 26, 1892, at the request of Dr. V. K. Corbett, of Caledonia. She was then fourteen years of age and had never menstruated. About eighteen months before I saw her, her abdomen began to enlarge. Six months afterward Dr. Corbett was consulted for an attack of considerable pain in the left side of the abdomen. He found that she was only voiding eight ounces of urine in the twenty-four hours, but under proper treatment this soon reached a quarter in amount, and has remained so ever since. He never discovered any albumin in the urine. In October, 1891, she had been tapped by a gynecologist, who is said to have diagnosticated a solid and probably malignant tumor, connected most likely with the liver, omentum, and ovary, and who deemed its removal not feasible.

I found the abdomen enormously distended with fluid and advised very strongly that a small incision should be made in the abdominal wall, so that I could determine the relations of the growth with accuracy. Her father, however, was not present, and had made it a condition that nothing beyond tapping should be done. I tapped her immediately and removed considerably over three gallons of amber-colored fluid. When this was evacuated I discovered a lobulated tumor on the right side of the abdomen, under the liver and apparently attached to it. It was evidently cystic in part, there being at least two cysts

perceptible. Each of these I tapped, obtaining from the upper one a light fluid and from the lower one a much darker fluid. On account of her age no vaginal examination was made. The fluids pointed strongly toward an ovarian cystoma. I again advised an exploratory incision.

April 29, 1893. The patient was finally brought to the Jefferson College Hospital. She has been tapped twice since February, 1892, the last time in February, 1893, when six and a half gallons were drawn off. She is now enormously swollen. The measurements are as follows: From the ensiform to the umbilicus, 16½ inches; from the ensiform to the pubes, 29½ inches (this measurement in myself reaches from the ensiform to the middle of the calf of my leg); circumference, 49 inches. The veins over the abdomen are very large. Nothing can be made out in the interior in consequence of the enormous abdominal distention. Examination of the urine shows no albumin and a very slight trace of sugar(?)

Operation. April 30, 1893. A small incision was made in the median line above the umbilicus, as the greater mass of the tumor lay there. A large trocar was thrust in and evacuated a very large quantity of characteristic opalescent ovarian fluid. The escape of this fluid revealed through the abdominal wall large masses lying especially under the liver and in the right iliac fossa. After this evacuation I enlarged the incision until it measured eventually about eight inches in length. I introduced my hand and found an enormous ovarian cyst, reaching up to the diaphragm and pushing everything out of its way. There were a number of moderate adhesions, chiefly to the belly wall and the omentum. The viscera was fortunately entirely free. The pedicle was only 2½ inches broad. The tumor arose in the right ovary, the left ovary being healthy but small.

The weight of the solid mass removed was twenty-seven pounds, and by actual weighing the fluid removed weighed eighty-four pounds, making a total of 111 pounds. The child herself weighed but sixty-eight pounds.

After the removal of the tumor I never saw so curious a looking abdominal

¹Read before the Philadelphia Academy of Surgery.

cavity. It looked almost like that of an eviscerated cadaver in the dissecting room. The tumor had so pushed the liver to the right and backward, and the stomach to the left, that nearly the whole of the diaphragm was exposed, and flapped up and down with the pulsations of the heart. Down the middle of the cavity the bodies of the vertebra were entirely exposed, showing the aorta and vena cava to their bifurcations, the intestines being a very minor consideration and pushed to each side in the hollow of the ribs and the lumbar region. When the abdominal wall was sutured the abdomen was excessively scaphoid, the anterior abdominal wall lying directly on the aorta and vertebrae: The puckering of the skin, although moderately marked, was much less than I had expected.

When the operation was completed a glass drainage-tube was inserted, and she was put to bed in very fair condition, in view of the gravity of the operation. The tumor was a multilocular cyst.

May 18, 1893. The child has made an uninterrupted recovery. The drainage-tube was removed on the fifth day, when the discharge had become almost nothing, but three days later a slight rise of temperature took place, and the discharge recommenced. A small rubber drainage-tube was therefore reinserted for a few days. She sat up at the end of two weeks, and will go home as soon as the slight discharge from the drainage opening ceases.

Remarks: I have not had time to search through the literature of ovariotomy, but so far as my memory serves I have never known a larger tumor removed from a child. It weighed just one and a half times as much as the patient. Her recovery has been most satisfactory in spite of a very poor and capricious appetite. The chief lesson the case teaches is the value of an exploratory incision in every case of doubt. Had this been done, instead of a mere tapping, in October, 1891, when the tumor was much smaller, then prognosis would have been much more favorable, and she would have been spared a year and a half of needless suffering. What seemed to be a most formidable operation really proved to be almost a simple one, the adhesions and the pedicle being most favorable for the speedy recovery which has ensued.

The Medical Digest.

FRENCH NOTES.

TRANSLATED BY E. W. BING, M. D.

CHESTER, PA.

TREATMENT OF GONORRHCEAL ORCHITIS, (Dr. Lardier).—Of all treatments for this affection, Diday's method appears the most satisfactory. It consists in swabbing the affected parts with a carbolic solution as follows:

Crystallized carbolic acid 9 grms	3 ii gr. xv
Alcohol, 1 grm	15 gr.

This is to be applied in two or three coats not only over the affected part of the scrotum but also over the course of the spermatic cord. At the end of two or three minutes the parts assume a pearly aspect characteristic of burns by carbolic acid. In a few hours the pain disappears and after three days the patient may go about. In all the cases observed a single cauterization suffices. The objection to the plan is the pain produced; to relieve which iced compresses may be used, or as the author advises, the injection of 8 to 10 cgm. (1 grain to 1 $\frac{1}{2}$ grains) cocaine, which renders the proceedings painless.

N. B. The injection is to be divided into four or five parts, which are injected at equal intervals over the field of operations.—*La France Medicale.*

TAPE WORM IN CHILDREN, (Bau-mil):—

Oil male fern . . . 3 grms	45 grs
Spr. turpentine } aa 25 grms	3 vi
Dist. water	
Gum arabic . . . 2 grms	3 ss

Take at one dose in equal quantity of milk, and three hours afterwards castor oil 3 ss.

PNEUMONECTOMY.—In the *British Medical Journal* Lawson reports a case of pneumonectomy. The symptoms indicated disease confined to the right apex; the patient was losing ground, but not very ill. She could not afford climatic treatment.

"An incision was made from mid-sternum along the course of the second rib through the pectoral muscle nearly to the edge of the anterior axillary fold. From the inner end of this I also cut for a

couple of inches downward's along the middle of the sternum. The skin and muscle were then reflected from the surface of the second and third ribs, and a number of vessels spouted and were secured—mainly branches of the acromiothoracic and intercostals. The external intercostal muscles were next separated above and below from the two ribs, and with a periosteal elevator the pleura was detached and stripped off from the inner side. With a fine saw the ribs were divided, through the cartilage internally and through the bone externally near the outer angel of the incision. Pinching up the pleura, I pushed in a trocar, the cannula of which was connected by tubing with a Junker's bottle and bellows, and air, which was passed through a hot strong solution of carbolic acid, was slowly pumped into the pleural cavity. The lung could be partially seen sinking slowly from the chest wall, but no dyspnea or cyanosis followed. I therefore laid open the external layer of the pleura the length of the external incision, and found the lung completely collapsed and moving up and down rhythmically with the diaphragm.

"There were extensive adhesions along the face of the upper lobe, which took a considerable time to tear through, but gradually, and with patience, a complete separation was effected. There remained high up two finger-like ligamentous processes attaching the apex to the summit of the extension into the neck. These were easily broken and the apex drawn out. The diseased part was seen occupying the anterior part of the apex. I had with me a large needle in handle, rounded, and without edge, and with an eye big enough to take in a large twisted silk thread, which had been boiled, and had long lain soaking in an ethereal solution of iodoform. With this needle I transfixed the lung some distance below the disease, tied firmly in two pieces after the Staffordshire method, and cut off the upper diseased portion. The portion removed was the size of half a fist, and contained a dense tuberculous mass with discrete granulations around it. Into the stump iodoform powder was rubbed, the cavity was sponged out, and the mutilated lung dropped back. In the course of the operation I had palpated

the whole organ for other collections, but found nothing except soft spongy lung tissue. The ease with which a living lung can be palpated struck me. The fingers seem to almost meet, even when the thickest portions are grasped, nor do they seem so voluminous as in necropsies. I closed the external incision without draining. At no time did the respiration get troublesome, so that neither the oxygen nor electric apparatus was wanted. The patient was now put to bed and carefully watched. The evening temperature was 99° degrees and pulse 84, respirations 36."

Left-sided pleurisy developed within a week, followed by hemothorax, graduating into empyema. Three months later the girl was improving rapidly but still discharging a little from the empyema.

THE DIAZO REACTION. — Dawson (*Dublin Jour. Med. Sci.*) discusses Ehrlich's test, in the light of numerous experiments, and comes to the following conclusions: 1. The diazo reaction is generally found in typhoid fever, more constantly than in any other except measles and acute phthisis.

2. The reaction cannot be used diagnostically in these three, or against typhus.

3. It may be used to distinguish measles from rötheln.

4. The substance causing the reaction does not give to urine any color, odor, reaction, deposit or specific gravity; nor does it produce albumen, sugar or indican though these are often present also.

5. It is not free acetone; nor is it a product of Eberth's bacillus.

BRONCHIECTASIS — T. Grainger Stewart (*Brit. Med. Jour.*) recommends this plan of treatment: He injects into the trachea a drachm of a mixture containing guaiacol, 2 parts; menthol, 10 parts, and olive oil, 88 parts. The fetor speedily disappears.

FOR EPISTAXIS, Guenot recommends a five per cent. solution of antipyrin, snuffed or sprayed up the nostrils.